Abstract of the Disclosure

It is an object of the present invention to provide a novel fluorescent protein having sensitivity to a calcium ion, in particular a fluorescent protein which can be used as an indicator for quantifying calcium ion concentration. The present invention provides a fluorescent protein having the following amino acid sequences (1) to (3) in order in the direction from the N-terminus to the C-terminus, wherein a fused fluorescent protein obtained by fusion of the fluorescent protein with a calcium binding protein and its target peptide can emit fluorescence which is dependent on Ca^{2+} ion level;

(1) an amino acid sequence from the n^{th} amino acid from the N-terminus to the C-terminus of a fluorescent protein selected from the group consisting of a green fluorescent protein or its mutant, a yellow fluorescent protein or its mutant, a cyan fluorescent protein or its mutant, a red fluorescent protein or its mutant, and a blue fluorescent protein or its mutant, provided that n represents an integer of 140 to 150;

(2) a linker sequence of a sequence of 2 to 20 amino acids; and

(3) an amino acid sequence from the 1^{st} amino acid to the $(n-1)^{th}$ amino acid from the N-terminus of the fluorescent protein described in (1) above.